

Institution: University of Essex		
Unit of Assessment: 21		
Title of case study: Improving the Quality of Official Data and Statistics in the UK and Europe		
Period when the underpinning research was undertaken: 2000-2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Annette Jäckle	Professor	01/2003 – date
Jonathan Burton	Associate Director, Surveys	07/2007 – date
Alexander Wenz	Senior Research Officer	10/2017 – 04/2019
Peter Lynn	Professor	06/2001 – date
Olena Kaminska	Research Fellow	09/2009 – date
David Pevalin	Professor	FT: 04/1999 – 12/2016 PT: 01/2017 – 08/2020
Period when the claimed impact occurred: 2013-2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact		
<p>Essex research resulted in improvements in the quality of data and official statistics in the UK and Europe:</p> <ol style="list-style-type: none"> 1. Improvements to EU Statistics on Income and Living Conditions (EU-SILC) data, the main source of information on income and poverty dynamics in the EU, by updating the European Regulation on EU-SILC (approved by European Parliament in April 2019). 2. Improvements to European Household Budget Survey data, the main source of information about household spending in the EU, through the development and implementation of novel mobile apps for data collection. 3. Maintenance of the quality of the National Statistics Socio-economic Classification (NS-SEC) through a rebasing in preparation for the 2021 Census. The NS-SEC is also included in all UK Office for National Statistics (ONS) surveys and major longitudinal surveys and used in National Statistics on a wide range of topics. 		
2. Underpinning research		
<p>The Institute for Social and Economic Research (ISER) has a long-standing programme of research concerning official statistics and their underlying data in conjunction with national and European statistical agencies. This impact case study is built around three overlapping streams of research that collectively serve to improve the quality of official data and statistics in the UK and Europe.</p> <p>One stream of research, led by Lynn, has addressed several aspects of the quality of the EU Statistics on Income and Living Conditions (EU-SILC), an annual series to which all EU member states must contribute data that comply with EU regulations defining the content, reference period, frequency and structure of the data. There are three key strands of research: (a) The extent and nature of sample attrition in EU-SILC, how this varied between member states, and how differences in survey implementation may have led to divergent outcomes [R1, R2, G2, G3]. It was</p>		

found that follow-up rates varied between countries and were particularly poor following divorce or separation, and amongst young adults leaving the parental home. Vulnerability to poor living conditions is particularly great following either of these events so this raised concerns about the fitness for purpose of the data. (b) The views of EU-SILC data users and data producers on the strengths and weaknesses of the current design, augmented with simulated estimates of the impact of alternative sample designs on the precision of estimates of persistent poverty and the costs of data collection [R1]. The research concluded that the sample design should be prescribed and that a rotating panel design with six waves would represent better value for money than the existing design [R1]. (c) The use made of the data in estimating differences between countries [R2, G1] focusing on the importance of taking sample design into account in estimation. The extent of information available to users on sample design was assessed and found wanting. It was concluded [R2] that Eurostat should ensure that appropriate sample design indicators are collected and made available to data users, and that data users should be supported to use these indicators correctly in analysis.

A second stream, led by Jäckle, examined how mobile apps can be used as data collection instruments for surveys. Two studies that used apps as alternatives to traditional paper-based spending diaries experimentally tested different protocols designed to increase survey participation and reduce the selectiveness in the types of people who participate [R3, R4, G4, G5, G6]. Results showed that there are still large differences in the UK between people who do and do not have mobile devices. These differences are compounded by differences between those who do and do not participate in an app-based survey [R3]. Although participation rates in app-based studies are still low, those who do participate are very compliant [R3] and experience low levels of burden. Sample members are three times more likely to participate in an app-based study if they are invited to do so within a face-to-face interview, than if they are sent an invitation letter by post [R4]. Offering sample members who decline to use the app a browser-based alternative, can more than double the participation rate and reduce the selectiveness of participants by half [R4].

A third stream of research, led by Pevalin, has involved evaluating the ongoing fitness for purpose of the NS-SEC. Research at Essex conducted in 2000-2001 finalised the design and construction of NS-SEC based on the new Standard Occupational Classification (SOC 2000) and a series of validation exercises were also conducted [R5, R6]. NS-SEC was adopted nationally as the official UK classification in 2001.

The NS-SEC was first rebased in 2010 onto the new SOC 2010 by Rose & Pevalin [R7, G7]. The 2010 rebasing was conducted without new employment relations data and the exercise reinforced the need for new data for future rebasing exercises. In 2017/20, the UK ONS funded a new rebasing project onto SOC 2020 led by Pevalin [R8, G7]. This project was conducted in two phases. The first phase resulted in recommendations for the rebasing methods including new data requirements. ONS accepted the recommendations from Phase 1 and added questions to the Q1 2019 Labour Force Survey (LFS). Phase 2 involved analysis of the LFS data and the construction of the three new derivation matrices as well as updating User Manuals and online advice. Phase 2 concluded in May 2020 when the new SOC 2020 Volume 3 was published online [R8].

3. References to the research [can be supplied by the HEI on request]

[R1] Lynn, P. & Iacovou, M. (2013) Methodological and practical recommendations for the future EU-SILC longitudinal component: Report to European Commission, Eurostat Directorate F (Social Statistics). Doc. LC- LEGAL/37-5/12/EN, Luxembourg: Eurostat. (Available upon request).

[R2] Kaminska, O. & Lynn, P. (2017) Survey-based cross-country comparisons where countries vary in sample design: issues and solutions. *Journal of Official Statistics*, 33(1): 123-136. <https://doi.org/10.1515/jos-2017-0007>.

[R3] Jäckle, A., Burton, J., Couper, M.P. & Lessof, C. (2019) [Participation in a mobile app survey to collect expenditure data as part of a large-scale probability household panel: Coverage and participation rates and biases](https://doi.org/10.18148/srm/2019.v1i1.7297), *Survey Research Methods* 13(1):23-44. <https://doi.org/10.18148/srm/2019.v1i1.7297>.

[R4] Jäckle, A., Wenz, A., Burton, J. & Couper, M.P. (2019) "[Increasing participation in a mobile app study: the effects of a sequential mixed-mode design and in-interview invitation](#)",

Understanding Society Working Paper 2019-04. Colchester: University of Essex.

[R5] Rose, D. & Pevalin, D.J. (Eds.) (2003) A researcher's guide to the National Statistics Socio-economic Classification. London: Sage. ISBN 0-7619-7322-2

[R6] Rose, D. & Pevalin, D.J. (with K. O'Reilly) (2005) The National Statistics Socio-Economic Classification: Origins, development and use. London: Palgrave Macmillan for ONS and ESRC. ISBN 1-4039-9648-2.

[R7] Rose, D. & Pevalin, D.J. (2010) [Rebasing the NS-SEC on SOC2010: A report to ONS.](#)

[R8] Pevalin, D.J (2020) [Standard Occupational Classification 2020 Volume 3: The National Statistics Socio-economic Classification \(NS-SEC rebased on the SOC 2020\).](#) See Appendix A for project leadership and authorship.

Research grants:

[G1] PI: R. Berthoud – retired. “Analysis of Life Chances in a Changing Europe (ALICE)”, 2008–2011, ESRC, £379,952.

[G2] PI (Essex): H. Sutherland – retired. “Second Network for the Analysis of EU-SILC data (NetSILC2)”, 2011–2015, Eurostat, £27,650

[G3] PI: P. Lynn. “Assessment of the future design of the EU-SILC longitudinal component”, 2012, Eurostat via DevStat, £22,941.

[G4] PI: A. Jäckle. “Understanding household finance through better measurement”, ESRC Transformative Research grant scheme, 2016–2017, £278,775.

[G5] PI: A. Jäckle. Additional funding stream for “Understanding household finance through better measurement”, National Centre for Research Methods (NCRM) Methodological Research Projects scheme, 2017–2019, £503,174.

[G6] PI: M. Benzeval. “Understanding Society: The UK Household Longitudinal Study: Waves 9-11”, ESRC research grant, 2016-2021, £30,161,955. This grant funded data collection on the Innovation Panel for impact stream 2.

[G7] PI: D. Pevalin. “Rebasing the National Statistics Socio-economic Classification on the Standard Occupational Classification 2020”, Office for National Statistics, 2017-2020, £58,635.

4. Details of the impact

Essex research has improved data collection practice and enabled the UK ONS, Eurostat, and the national statistical offices of the EU member states to produce high quality survey data and provide high quality official statistics, a necessary basis for policy making and allocation of resources.

Statutory change to the EU-SILC Legal Basis

Research led by Lynn informed statutory change that was being considered by a Eurostat Task Force on the Revision of the EU-SILC Legal Basis. The report [R1] was presented to the 4th meeting of the Task Force and discussed in detail by the member states and Eurostat representatives [S1]. Based on this the Task Force adopted the main recommendation of the report to extend the longitudinal component from four waves to six, and that the rules and procedures for minimising non-response should be re-specified and better monitored.

The conclusions of the Task Force were subsequently presented to a Meeting in Luxembourg of the Working Party on Living Conditions [S1]. After considerable discussion and cross-examination of Lynn, the Working Party, consisting of representatives from all member states, upheld the recommendations of the Task Force. This resulted in the approval of EU Regulation 2019/1700 by the European Parliament on 19 April 2019 establishing a new common framework for European statistics relating to persons and households, based on data collected from samples [S2]. This represents a clear change from an inferior methodology to a superior one, reflecting the recommendations of [R1].

Eurostat state: ‘...the new legislation recommends for the first time to use, when considered possible by the EU Member State, a six-year or more rotation scheme, a change that would not

have been made without the Essex research. Extension of the number of EU-SILC waves from four to six provides better estimates of persistence of poverty, release of new breakdowns, multiple new analysis opportunities, as well as improved fieldwork efficiency for National Statistical Institutes... Higher quality data should lead to better- informed policy decisions that ultimately improve the lives of all citizens of Europe' [S1].

The new regulation ensures consistency of sample and data collection design between countries which substantially enhances cross-country comparability, a key objective of Eurostat.

Modernising data collection methods for European Statistics

Jäckle's research [R3, R4] led to invitations to be involved in two Eurostat-funded projects that are modernising data collection methods for European Official Statistics. The first project led by Statistics Netherlands (Jan 2019-Feb 2020) was a development project in collaboration with Statistics Finland, Statistics Slovenia, Statistics Austria, and UK ONS. The project developed and tested a mobile application spending diary that could be used cross-nationally for the Household Budget Surveys. Usability testing was carried out in the Netherlands, Finland, and Slovenia [S3]. The second project, led by the German statistical office DESTATIS (February 2020 - June 2022), is a follow-on project in collaboration with the National Statistical Institutes of the Netherlands, Italy, Belgium, Austria, Poland, France, UK, Luxembourg, Norway, Sweden, and Spain. This includes large-scale experimental testing of protocols for the implementation of mobile apps for the Household Budget Survey and Time Use Survey. This work contributes to the longer-term development of a European Platform supporting the use of shared survey solutions, including mobile apps. Jäckle's research has been drawn upon for both of these Eurostat development projects [S3].

Senior methodologist at CBS Netherlands comments: '*...[Jäckle] advised on a number of major decisions in usability tests and app user interface. Furthermore, you actively participated in the in-person project meeting. Based in part on your recommendations, designs have been altered. Importantly, a roadmap has been constructed describing the various features of the app to be added and/or tested following your recommendations.*' [S3]

Maintaining high quality measures in NS-SEC

Pevalin's research [R5-R8] has maintained a high-quality socio-economic measure for UK ONS to use in the Censuses and all major surveys. The NS-SEC was adopted as the sole official government classification in 2001 and rebased in 2010 and 2020. The NS-SEC has been essential for generating national statistics on the prevalence and magnitude of inequalities in the UK population and segments thereof. [S4] The ONS published its latest analysis of trends on life expectancy by socio-economic position at birth and at age 65 in 2015 [S5] which exclusively used the NS-SEC to show whilst life expectancy improved for all classes, overall the gap widened with those from routine classes gaining less than professional classes. The Social Mobility Commission has published a series of reports on social mobility, the class pay gap, and other related issues mandated under the Life Chances Act 2010 [S6, S7] which relied on the NS-SEC to measure intergenerational social mobility and class pay-gap.

The 2020 rebasing raised issues about changes to the Census content and deriving the NS-SEC from Census data. The rebasing team, led by Pevalin, recommended inclusion of a "supervisory status" in the Census for comparability with 2011 data and this recommendation was taken forward by the ONS Census Unit and included in the Census Order which became law at the Privy Council on 20 May 2020. [S4]

The National Statistician, Chief Executive of the UK Statistics Authority confirms: '*The impact of the original construction of the NS-SEC and the two subsequent rebasing exercises [by Pevalin and Rose] is the development and maintenance of a vital tool for ONS to use in determining the prevalence and magnitude of inequalities in the UK population...The classification is used on all major national surveys conducted by ONS including the forthcoming 2021 Census*' [S4]

5. Sources to corroborate the impact

[S1] Testimonial from Eurostat, European Commission.

Impact case study (REF3)

[S2] [Regulation \(EU\) 2019/1700 of 10 October 2019](#) establishing a common framework for European statistics relating to persons and households, based on data at individual level collected from samples and complementing Commission Implementing Regulation (EU) 2019/2242 of 16 December 2019 (Page 17)

[S3] Testimonial from Statistics Netherlands (CBS) Senior Methodologist.

[S4] Testimonial from the Chief Executive of the UK Statistics Authority, the National Statistician.

[S5] ONS. (2015). Trend in life expectancy at birth and at age 65 by socio-economic position based on the National Statistics Socio-economic Classification, England and Wales: 1982-1986 to 2007-2011.

[S6] Social Mobility Commission. (2019). State of the Nation 2018-19: Social Mobility in Great Britain.

[S7] Social Mobility Commission. (2017). Social Mobility, the Class Pay Gap and Intergenerational Worklessness: New Insights from The Labour Force Survey